Housekeeping first – there's only one handout for you to take home, but it is our website with links to all this info, and the whole presentation will be on the KHS site eventually. The table has samples of many photographic processes, including ones I soaked and dried, from my own collection, so feel free to actually handle them. I'm going to talk, then do a quick run-through of a real disaster scenario, and then plenty of time for questions and sharing our experiences.

How can you plan for the unexpected? And why should you? Short answer - if you plan for 100 things, and 102 happen, you only have to come up with new answers for two. And if you know you have a problem, you can plan, even if you don't have money to fix it. And as we've learned, something like Katrina can add another 200 problems.

Even small emergencies can loom large, even when you have a plan. Emergencies become disasters when you don't train people, you don't have the info for them, and you don't have a leader. Take a Thanksgiving weekend, Black Friday to be specific. No faculty are working, the library's only going to be open a few hours, so there's one staff and a few students in Circ when the water pipe breaks. They can't reach anyone on the phone list, and the plan on the intranet is super-simple - so simple it doesn't define the terms or say where the supplies are. Doesn't matter, they don't have keys for the supply area anyways. Nor have they had any training. But if they hadn't been there, the water could have run for another two days!

You don't have to get supplies from a library vendor - you can get them from medical supply houses, hardware stores, and shipping companies. Don't store them in your basement - that's the hardest place to get to, because water runs downhill, there are few windows to get smoke out, and you don't want to be in the basement with electrical equipment when it's wet. Let alone having all your recovery supplies wet, too. The best thing is to store it outside the building, and even better if you can pool your resources with others to buy supplies for when you need them.

Everyone doesn't need to have a full copy of every procedure, but there should be several in people's homes and cars. Have a copy on your intranet, and one in the cloud somewhere - Google docs will let

you restrict access, if you feel you need that. You also need to practice, either with real the real thing or a tabletop exercise like we'll do later.

Freezing doesn't dry your media, but it does buy you time. Not all media can be frozen, so check first; but it's quick and easy. If you were freezing materials that were pristine, you'd want to use much more care, but for wet media for a week, you can put it in garbage bags or ziplocks and put it in a home freezer. If you have a large amount, talk to a local grocer or restaurant, preferably in advance. You'll have to dry them later, but you'll have time to find space to do it and replenish your supplies. Remember, you may not even get back in the building for days, so time is precious.

The number one thing to save in a disaster is people. Always. Number two is your accession register or catalog. Your insurance company will never believe that you had three Gutenburg Bibles and two Van Gogh's in the basement without them. And plan on keeping anything you claim, no matter how nasty, until the adjuster gets there.

Magnetic media

Magnetic media become unstable at a lower temp than paper burns, so even if paper hasn't burned, you need to check your media. That means media in file cabinets and cases, too, since the damage is caused by heat, from whatever cause, not just flames.

Floppy disks

If you have a backup copy, discard the wet one and use the backup. You can store discs in cool distilled water up to 72 hours, or you can freeze them until you can get them to an expert. You can try airdying 5 ¼ discs by cutting the edge of the jacket and agitating the actual disc in repeated baths of distilled water, then drying them with cheesecloth, then putting it in a new jacket and copying it. You can use the jacket several times. Just send the 3 ½ discs to an expert, since you will likely damage them doing it yourself.

More important, do you have a 3 ½ or 5 ¼ drive to read them on? If not, you may not want to save them at all!

Reel to reel tapes – air dry within 72 hours. Water and smoke damage may only be on the outer layers of the reel, in which case you can wash them in distilled water. Don't unwind the reels. You can dry them on blotter paper, still wound, if you can't get them to an expert.

Video and cassette audio tape

DO NOT PLAY BACK - Playing contaminated tapes prior to restoration may cause additional damage to tapes and can harm machinery.

Exercise extreme care when moving tapes from a disaster site. Changing tapes' orientation can cause damage and spread contaminants. If possible, tapes should be cushioned against shock and insulated against sudden changes in temperature.

FOR FIRE/SMOKE CONTAMINATION - Chemicals and techniques used to decontaminate your facility are not applicable to magnetic tape. Tape cases should remain closed until proper decontamination can be performed. If tapes have been contaminated by water or fire-suppressant chemicals they need immediate attention.

Tapes exposed to liquids should be decontaminated as soon as possible, while tapes are still wet. Air drying at your facility is not recommended, as improper drying causes the tapes to deform and may leave corrosive residues. Wet tapes should be kept cool at all times to slow decay.

Don't freeze dry tapes, and don't let them stay damp – wet is better, since damp encourages mold.

Don't try to play the tapes, it will not just damage the tape, but the machinery.

Shipping and storage cases are not water or smoke resistant – if there's anything on the outside, it's inside too. Don't change the orientation and spread it around, and avoid it by storing tapes spine up or within larger boxes. If tapes have already dried when

you get to them, don't rewet them. It may activate the chemicals like chlorine and salt left by the water.

More tapes are damaged by mishandling than the actual disaster.

Photographs

Priorities – within 24 hrs: anything on a hard surface – glass negs, dags, ambroytpes, tintypes. To keep it interesting, NONE of these should be frozen!

48 hours – color and B&W prints and negs, then Albumen and salt prints

Cyanotypes in alkaline water are high priority, but in acid water are low priority – so give them their own water with a few drops of vinegar! Cyanotypes are easy to ID, they're blue, and there's one on the table here.

The first thing you want to do is remove negatives and prints from wet enclosures or folders, keeping the folder with them – if you have a dozen photos, they might be easy to match up, but if you have 2 million, like next door, that's a little harder. So plan on double the space.

Cased photos, like dags, ambros, and tintypes are all originals – there are no negs, just the single print, and they can't be frozen, so they're first priority. Don't try to disassemble them, just place them on a flat surface and open them, don't rinse them, don't wipe them. If they have dirt or water under the glass, call a conservator for advice.

Uncased images should be dried image side up and not touched.

Paper prints should be rinsed in cool water, about 60-70 degrees in trays. Agitate the water and change it several times during the rinse, and keep the temperature the same. After 15 minutes for BW prints and 10 for color, drain them and air dry. If the prints are deteriorated

or cardmounted when you start, reduce the time in the water.

Color and BW negs – soak in clean water at 60-70 degrees for 30 minutes. If there is smoke or dirt, brush 10-15 minutes while brushing with a very soft brush, like a blusher brush or cotton balls and then rinse for 15 minutes. Rinse with Kodak Photo Flo at ½ ounce to a gallon of water. Order your Photo Flo online, you can't walk into a darkroom and borrow it anymore, or go to the local photo supply house! It's running $8 for 16 ounces, so stock up on it – that's 32 gallons of rinse per bottle.

The exception are nitrate and acetate based negs – save them right after dags and ambros. They are already deteriorating and water and heat will accelerate it immensely. Never put them in plastic enclosures – I had someone put them into negs sheets to print, and in a week, there was literally nothing left of the nitrates but a little sticky residue. You can tell if the negs are deteriorating – acetate smells like salad dressing, nitrate like old sweat socks. By the time you can smell either, the negs are well on their way to deterioration.

If you have collodion glass plate negs, don't rinse them, dry them face up and flat. You may not have any image left after they get wet, though.

Wash Kodakchrome transparencies and slides the same as you do negatives. Don't use photo flo on Ektachrome slides, and consult a conservator if they need stabilization.

Dry prints flat on blotter paper, or if space is a real problem, clothespin them to a strung line. That's the preferable way for negatives.

Freeze photo albums. You can airdry them, but it takes a lot of time, there may be watersoluable markers or other materials in the albums, and very likely several different types of print. Buy time by freezing them and letting a conservator work on it later, or even doing it yourself after studying up on them. If the binding has disbound itself, you can try airdrying the pages.

Smoke and fire damage is not time sensitive, so if it’s not wet, take your time and get good advice on recovery.

Digital prints are another can of worms entirely. There are no standards, you can make it up yourself, as you go. The permanence and disaster resistance of a digital print depend on the inks, the paper, and the printer. There are best practices, but you want to find out all you can about a print, whether photographic or other, when you accession it.

Film media

Microfilm and movie film

If the box or can is wet, wipe it off and check the contents – they may be dry.

Audio media and motion picture film – keep them wet until they can be reprocessed. Get it to a reprocessor within 72 hours. If it’s commercial film, or you made it and stored the master elsewhere, it may be cheaper and quicker to just make or buy a new print.

nitrates - if you saw Inglorious Basterds, you saw them light a pile of nitrate film - except you didn't. Nitrate burns like magician's flash paper, and it doesn't take a match to light it, it can spontaneously combust and doesn't need oxygen to burn. Even when frozen. But no one who hasn't worked with it would believe it. If you have a small amount, store it separately from other film. If you have more than a pound or so, think freezer, and don't try to rescue it in case of a fire, leave that to the pros. The good news is that the Library of Congress found a copy of The Great Train Robbery that that was mislabeled and lost for almost a century, and it was almost pristine, so storage is everything!

Phonograph records

The earliest records were made of shellac and are both thick and heavy. 45s and LPs both came out after WW2, in 1949, in either acetate or more commonly, vinyl.

You want to clean them in distilled water with 1% photo flo and air dry them within 48 hours, working on the shellac and acetate discs first, since they are most vulnerable to water damage. Dry them vertically in a dustfree area. Always hold them by the edges, in fact, always hold any media by the edges.

Sleeves and jackets can be treated like any other paper object, but if you lose a label, mark the disc with a grease pencil in the center. If storage boxes are damaged, move five at a time into crates with padding in the bottom and interleave every 5 discs. Always keep them vertical. Keep the weight low enough to move.

Books

Books that are more than half wet should be allowed to drain. Place the book on its top edge on a sheet or towel. Place small pieces of sponge under the fore-edge of the book to allow water to drain. Do not fan open the pages. Continue until water is no longer draining. The book can now be frozen.

Freezing does not dry the book but it prevents further damage from water absorption. A book may safely remain frozen for weeks, even months. Wrap the book in plain waxed paper and place in the freezer. Frost-free freezers can dry out wet books by the same process that produces "Freezer burn" in food. The process however can take weeks to months depending on the moisture in the book.

Video demonstration on how to wrap a book for freezing

After the books have frozen, the ice can be brushed off and the books can be thawed slowly. During the thawing process blot all excess water and then air-dry as described below.

Books that are half wet have the best result when air-dried. Fan books open and stand on top or bottom edge; never stand them on the front edge. Stand books on driest edge first as it is the strongest. As the book dries turn it upside-down to the opposite edge every few hours.

Video demonstration of how to set up a book for air drying

Place a sheet of white paper towels larger than the pages between the front and back cover and adjacent page before standing on edges. Replace the interleaving as it becomes saturated.

Video demonstration of interleaving

When the book is no longer wet, but still cool to the touch, close and place on a solid surface with a slight weight such as a brick to keep distortion to a minimum.

Check frequently to ensure that no mold is growing.

Real disasters

LFPL – from the director

The mechanical systems, the boilers, air handling equipment, the chillers, all the electrical supply out in both buildings

We got the Fire Department to help us bail. They brought two pumpers, but that failed; there was too much debris. The Metro Sewer district continued pumping. They pumped water so we could reach the floor to see the computers. That happened overnight. We had a small electrical fire overnight in the computer room, so we had the Fire Department cut off electricity.

Our sorting room was devastated. There were tens of thousands of current materials there. The books look like they've been in the bathtub, except there's a lot of mulch [from landscaping around the library].

Notes- Louisville has a combined sanitary and storm sewer system. You can call your local sewer authority and see what kind you have. They rarely get calls to talk, as opposed to complain, and they should

be very happy to talk to you. The same for fire marshals and volunteer firechiefs.

Alaska State Archives, Juneau, 2009

Monday August 17
construction bubble ripped off the roof during the previous night.

Head of Archives was on vacation, Records Manager discovered the flood at 7am There was a ¼" puddle headed for the electrical panel and people walking in the water. Safety hazard.

Centennial Hall was called but was unable to give space. On day 4, they offered their space but it was not needed by then. Head of Alaska State Library – Historical Collections (ASL-HC) secured the Juneau Arts and Culture Center (JACC) around 8 or 9am. There was a pre-existing verbal agreement with the JACC director to use the space in an emergency.

Conservators attending the Western Association for Art Conservation contributed expertise and labor to the response. Approximately 15 conservators helped.

Tuesday August 18

- ASM Curator lined up a refrigeration van from AML barge lines, awaiting approval from administration.
- 4pm, 200+ more wet boxes were discovered when the emergency is about 52 hours old.

Weds

Refrigeration van ordered by State Records Manager, needs special power source and is driven to the barge line to be plugged in

- Friday August 21
- Humidity strips ordered from Talas, they shipped them ground by

accident. Arrive the following Thursday

Debriefing:

Although there was leadership, people were still confused about who was in charge. Some volunteers left when they could not find someone to give them direction.

Having a laptop with Archives database Minisis on it would have been nice.

Document safety: Records with confidentiality issues are being dried in asecure office. Someone needed to stay with papers in SOB atrium until building was locked each night.

Wet documents put into dry boxes for transport had a star drawn on the lid, but many people did not know what the star meant.

Fans are loud and create an annoying breeze. People are getting hoarse from shouting over them.

More first aid kits needed for paper cuts, staple wounds etc.

Fanning out folder contents with folders on the bottom promotes drying, but you must counteract blow-away. Leaving staples, paper clips etc on helps (and then discard those fasteners to make it easier to put folders into boxes.) Weight the papers. Improvised weights included nuts & bolts, pellet gun shot, sand, cat litter etc put in ziplock bags or envelopes taped shut, clean plastic bottles, or small Tupperware containers.

Wet feet will freeze to floor of the van

In general, it is good practice not to leave boxes on the floor at the end of a workday.

Questions and comments?

Master Plans
Library and Archival Consultants

Home page:

http://www.masterplansinc.com

Disaster page:

http://sites.google.com/site/libraryandarchiveresources/disaster-planning-and-recovery

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